



Symptoms of powdery mildew

Other topics in this Viti-Notes series include:

- Characteristics of powdery mildew
- Monitoring for powdery mildew
- Managing powdery mildew

Look for powdery mildew particularly in blocks where the disease has previously been a problem, and in areas where vines may be dense, sheltered or stressed, especially after mild cloudy weather with low to moderate light levels.

Varietal susceptibility

Commercially important *Vitis vinifera* grapevine varieties are prone to powdery mildew infection to various degrees. Shiraz and Grenache varieties are less susceptible than most while at the most susceptible end of the scale are Chardonnay, Chenin Blanc, Muller Thurgau, Muscadelle, Riesling, Semillon and Verdelho

Leaf symptoms

Severely diseased young leaves are distorted and crinkled. Leaves older than two months are less readily infected. In mid-late season severely infected vine canopies smell musty and severely diseased leaves fall prematurely.

- Leaf spots are first seen as yellow-green blotches up to 2-10 mm in diameter.
- Web-like fungal growth on the surface of blotches can be seen with a hand lens.
- The webbed fungal growth may join to cover the whole leaf.
- Ash-grey to white powdery spores are produced.
- The finer veins on the underside of diseased leaves turn brown.
- Leaves may blacken when infection is severe, especially in hot weather.
- Web-like patterns of dead, darkened leaf cells can be seen at a later stage, if the fungus is rubbed off.

Shoot symptoms

- Buds infected in the previous season produce 'flag shoots' with distorted leaves which curl upwards. Initially, flag shoots are entirely or partly diseased.
- Oily grey blotches appear on green shoot stems
- Ash-grey to white spore patches develop, spreading until whole shoots are covered by the mildew
- Severely diseased shoots are often stunted and can die
- Old or earlier infections appear as dark red-brown patches on mature canes.

Bunch symptoms

- Infected cluster parts produce powdery ash-grey growth on immature berries and bunch stalks
- Diseased berries become scarred, distorted, split, rotted, and shrivelled
- Black grape varieties can exhibit patchy colouration as they mature, but this is difficult to see after the red colour develops
- Post-veraison, web-like patterns of dead cells develop on the surface of diseased berries.

Cane symptoms

- Severely diseased canes mature irregularly and in winter may die back from the tip
- Red-brown to black web-like patterns develop on infected canes in winter.

'Looks like'

Powdery mildew grows on all green parts of vines including both upper and lower leaf surfaces. It is often confused with downy mildew, but downy mildew only produces spores on the lower surface of leaves. Late in the growing season, powdery mildew damage can occasionally be confused with mite damage. Some powdery mildew infections can resemble herbicide damage, and leaf hairs can occasionally be mistaken for powdery mildew spore masses.

Further information

Product or service information is provided to inform the viticulture industry about available resources, and should not be interpreted as an endorsement.

A useful reference with illustrations of the lifecycle and symptoms is

- Diseases & Pests, editors, Nicholas, P., Magarey, P.A. and Wachtel, M., 1994, Grape Production Series 1, Hyde Park Press, Adelaide, (available Winetitles, 08 8223 4700, or www.winetitles.com.au).
- Also useful is the glove box edition of the above, Field Guide to Diseases and Pests.

IPM Viticulture: Research to Practice is a training program whose delivery can be fine-tuned to suit each region.

- Enquiries to Peter Mansfield on (08) 8222 9255 or visit www.crcv.com.au/education/rtp for more information.

Visit the web site at www.crcv.com.au/viticare/vitinotes/ for updates and more Vitinote titles.

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